

# Inadmissible, Statement Only and Unlikely reports of AAGA



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## HEADLINE

25.1 This chapter presents, for completeness, a summary of the reports submitted to NAP5 that were judged Inadmissible, or Unlikely to be AAGA. Also presented are the Statement Only cases for which there were no details available from case notes. Although these cases form perhaps the weakest in terms of levels of supporting evidence, aspects of the vignettes are recognisable in other categories of cases presented elsewhere in the NAP5 Report. Although the median reporting delay in Statement Only cases was ~31 years, longer-term adverse psychological impact was still evident in more than one-third of cases – but at 38% was less prevalent than in those cases reported earlier. This seemed to be associated with distress felt at the time of the AAGA. Clearly medical records are essential to full interpretation of the AAGA, but these reports produce data that remain largely consistent with the more robust AAGA reports.

## BACKGROUND

25.2 To our knowledge there are no specific studies of patients who report AAGA but in whom it cannot be verified.

25.4 In one case, it was not clear if the weakness related to a prolonged partial paralysis resulting from the effect of the patient's electrolyte disturbance on neuromuscular blockade. Because the patient did not express the view that they should have been unconscious this was classed as inadmissible.

## NAP5 CASE REVIEW AND NUMERICAL ANALYSIS

### Inadmissible reports

25.3 Of the 321 reports filed to the website, 21 (6.5%) were judged inadmissible by the Panel after review. The reasons included: not a first report; surgery in non-NHS hospital; report made outside the reporting period; patient did not complain of 'awareness' but of 'pain' or other discomfort, at a time when they did not expect to be unconscious. There were several reports that raised interesting issues as to how unexpected awareness during anaesthesia should best be defined.

A middle-aged patient with a complex medical history of disease involving the kidneys that produced electrolyte imbalance underwent elective eye surgery. The anaesthetic appeared uneventful, consisting of thiopental, remifentanyl, NMB and tracheal intubation. A nerve stimulator was used for neuromuscular monitoring and blockade reversed with neostigmine. However, the patient (fully awake) complained of some weakness of the legs and arms during the recovery period that lasted ~12 hours. The patient was very distressed and experienced sleep disturbance for several weeks. At no time did the patient express an expectation to be unconscious during this time.

25.5 There were several instances during anaesthesia where the patient moved (sometimes the anaesthetist noticed low or absent vapour delivery), and anaesthesia was promptly deepened. In these cases, the anaesthetists questioned the patients afterwards, but there was no report of awareness. Although this indicated a degree of responsiveness (and in some cases likely wakefulness) at the time of the movement, because there was no report from the patient, the Panel judged these cases inadmissible.

An elderly patient underwent an elective general surgical operation. Anaesthesia provided by a consultant seemed uneventful (propofol, fentanyl, NMB – monitored by a nerve stimulator – tracheal intubation and isoflurane) until dramatically, the patient suddenly sat up in the middle of surgery. Anaesthesia was deepened, but no cause was found for this event, and the patient had no recollection of it later.

25.6 One case involved residual neuromuscular blockade in the dead space of an intravenous cannula, that was flushed several hours after surgery was complete, on the ward, resulting in accidental paralysis, followed by resuscitation. Although this was a serious event, there was judged to be no report of 'accidental awareness' or an expectation of unconsciousness before or at the time of the event. While there are elements of this case similar to Category G (Drug Errors) as it did not occur close to a time of intended anaesthesia it was deemed inadmissible.

Several hours after uneventful general surgery, the ward nurse started to administer intravenous antibiotic to a middle aged patient, who suddenly became unresponsive. The nurse promptly called for help and the patient's lungs were ventilated (bag and mask) with cardiac massage for a few minutes, after which spontaneous breathing returned. The patient reported being unable to move or breathe, and had recall of the resuscitation.

25.7 It appeared that NAP5 coincided with a post-operative questionnaire of patients after cardiac surgery, conducted in some hospitals. The questionnaire had included the questions 'Do you recall a tube in your throat after surgery' and 'Do you recall being conscious between going to sleep and waking after surgery'. A small number of patients had ticked 'yes' to these questions, but there were no further details and no follow up. The

Panel concluded that the questions asked were not sufficiently precise, and the period covered by such a question might include both surgery (intended anaesthesia) and intensive care (intended sedation); the Panel had no access to further information and judged the reports inadmissible.

25.8 In one case, a patient suffered a cardiac arrest during a long operation, but the 'recall' was judged to be a description of an out-of-body experience, or a dream, and there was no sense that the patient had experienced awareness of events.

An elderly patient underwent complex general surgery. After several hours of surgery, the patient suffered a cardiac arrest (ventricular fibrillation) of uncertain cause which required several minutes of cardiac massage and resuscitation (during which time the anaesthesia was reduced). There was an uneventful recovery but the patient reported 'having seen himself from above, surrounded by people working a machine'. There was no other report of sensations or conversations.

25.9 In summary, several of these inadmissible cases were focuses of interesting debate, and reflect the genuine difficulty of classifying some reports as 'awareness' or not.

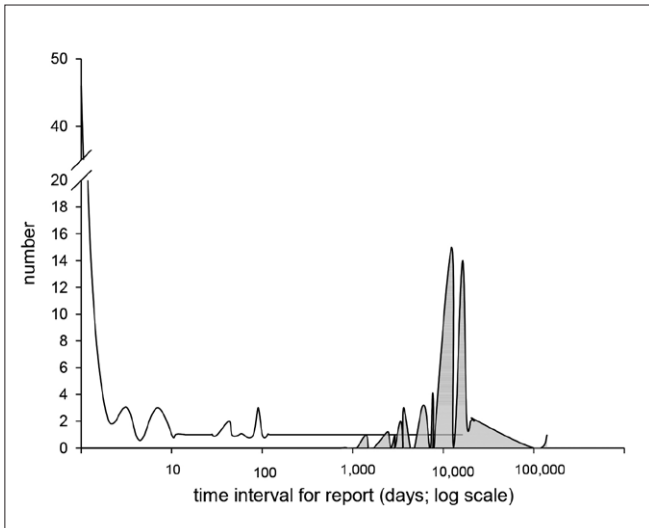
#### Statement Only cases

25.10 There were 70 (23% of admissible cases) Statement Only cases, with no medical or anaesthetic record to analyse further details.

25.11 The striking difference between these cases and the Certain/probable or Possible cases was the time interval between AAGA event and reporting (Figure 25.1). The time interval was unknown (but likely very long) in five cases, and for the remainder the median was 11,315 (7,300 – 15,248 [1,163 – 22,630]) days (i.e. a median of ~31 years with an upper limit of 62 years (almost to the start of the NHS) – the shortest interval in this group being ~3 years).

25.12 Some reports were extremely sparse in detail, such that it was impossible to know what could have happened, either in terms of anaesthetic detail or patient experience.

**Figure 25.1.** Time interval for first report of AAGA in Statement Only cases (shaded) versus Certain/probable or Possible reports (line)



A patient recalled being wheeled through some hospital doors many years ago. The patient could not recall the operation or the date or any other details but had felt this was during anaesthesia.

After ~60 years, an elderly patient reported AAGA during tonsillectomy as a child. There were no details of the experience, simply the patient felt they were 'awake'.

After a delay of 62 years, a patient reported AAGA during surgery as a child. The patient felt they could not move but could hear, but could not provide any further details of what the operation was.

25.13 Some reports seemed very implausible in their detail, if taken at face value, and might indicate altered memory for detail of what happened, or splicing of some memory from later events during the hospital stay.

After a delay of 42 years a patient reported AAGA during an urgent appendicectomy, where the patient sat up in the middle of surgery and recalled an amused expression from theatre staffs' faces, then a feeling of a face mask applied.

Many decades after a surgical operation (unknown which type) as a teenager, the patient reported feeling at the time that their 'memory had been stolen'. The patient attributes poor academic performance and now poor memory to AAGA.

After a delay of 46 years, a patient reported being awake and screaming throughout their tonsillectomy surgery as a child.

It was unclear in some reports – especially obstetric and Caesarean section cases – whether a general anaesthetic had been administered, or if the case might have plausibly been conducted under regional anaesthesia.

After a delay of over 40 years, a patient reported pain during the incision of Caesarean section and the surgeon speaking. The patient simply focussed later on looking after the baby and thought nothing of this incident. The details of anaesthetic are unknown.

After a delay of over 30 years a patient reported paralysis and pain, and an inability to talk or call out during her Caesarean section. The patient had experienced psychological problems since, and a fear of anaesthetics such that operations had been delayed as a result, but subsequent anaesthetics had been uneventful. It is unclear why there was delay in reporting, and the details of anaesthetic technique are unknown.

25.14 Several patients reported multiple experiences of AAGA on different occasions.

**Incident 1.** After a delay of 20 years, a patient reported hearing a dentist speaking a sentence during surgery. No details of the anaesthetic technique were available, but the patient believed it to have been a general anaesthetic.

**Incident 2.** After several years, a patient reported AAGA for a second time during an urgent abdominal operation. The patient heard the surgeon speaking. Neither incident caused distress.

**Incident 1.** After a delay of over 60 years, a patient recalled AAGA during tonsillectomy, with the sensation of what sounded like a Boyle-Davis gag and of bright lights overhead.

**Incident 2.** After a delay of 30 years the same patient reported a feeling of her legs in stirrups during a gynaecological operation, some pressure and hearing voices. There was no distress, but for a while the patient experienced recurrent dreams of these events.

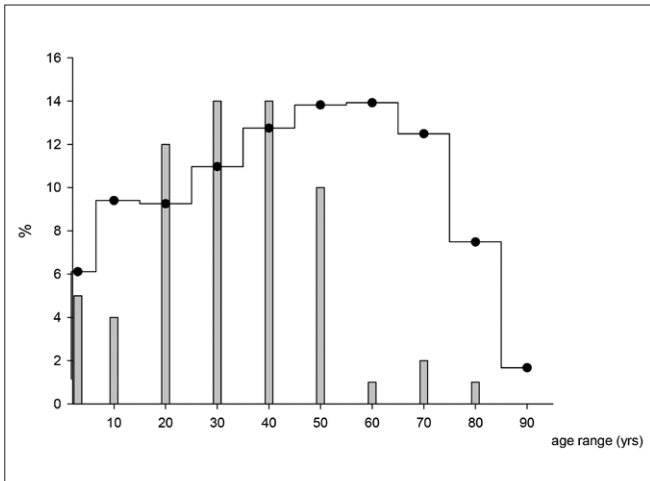
25.15 Several reports, however, were quite detailed, even after considerable time intervals, and recurrent themes included the recall of events at induction (tubes in the mouth or throat) and a feeling of paralysis.

Fifteen years after orthopaedic surgery, a patient remembered an injection in their hand, then a tube being put into their throat, and being unable to move or speak, feeling very anxious about this. The patient was left with a fear of facemasks.

After a delay of five years, a patient reported AAGA during emergency surgery. The main sensation was paralysis with no ability to communicate and the patient was distressed. "I counted to ten as I fell asleep but then was aware of a tube in my throat. I could not move, then recall being moved. There were bright lights, even though my eyes were shut and I thought to myself "Oh no, I am going to be awake and feel the surgery happening."

25.16 Figure 25.2 shows the estimated age distribution of these cases (the estimated age at which the AAGA occurred, not the age at which the report was made to NAP5) for patients where this was known. There are fewer older patients making Statement Only reports than undergo anaesthesia in the general population (this is expected as these are historical cases when the very elderly have not survived to make a report).

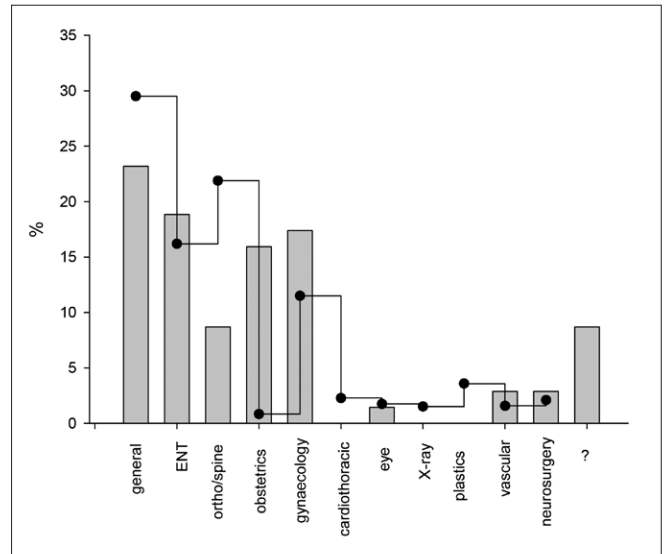
**Figure 25.2.** Histogram of age at AAGA event for Statement Only cases (bars) and that of general anaesthetic cases from the Activity Survey (lines with dots). Age ranges are in deciles, with the smallest being <5 yrs and the highest being >90 yrs



25.17 Body habitus at time of report was largely unknown.

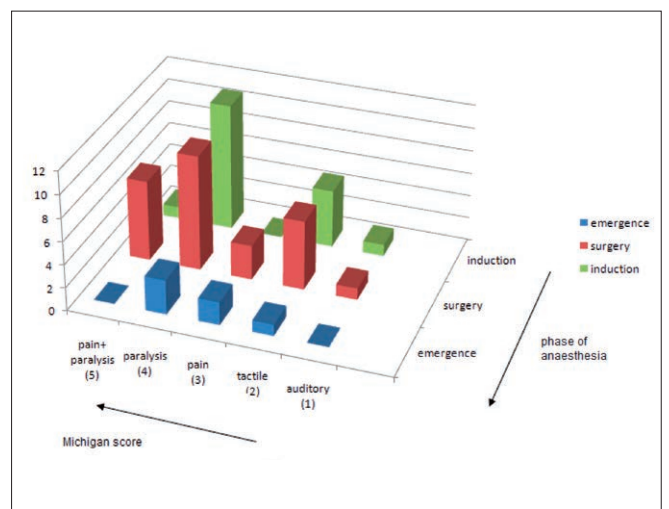
25.18 Figure 25.3 shows the distribution in terms of closest specialty. As with the Certain/probable and Possible cases (Chapter 6, Results), there was over-representation of reports from obstetrics, and to an extent, gynaecology (but notably, not cardiothoracics). However, as with the Certain/probable and Possible cases there was an under-representation in AAGA cases of orthopaedics/spine/trauma and plastics. However, the 'don't know' category was marked in the Statement Only cases.

**Figure 25.3.** Distribution of Statement Only AAGA cases (bars) and in the Activity Survey (dots and line). The specialties are ordered as the respective figure(s) Chapter 6, Results. ENT – ear, nose, throat and dental and maxillofacial surgery; ortho/spine includes orthopaedics, trauma and spinal surgery; eye is ophthalmology; X-ray is radiology



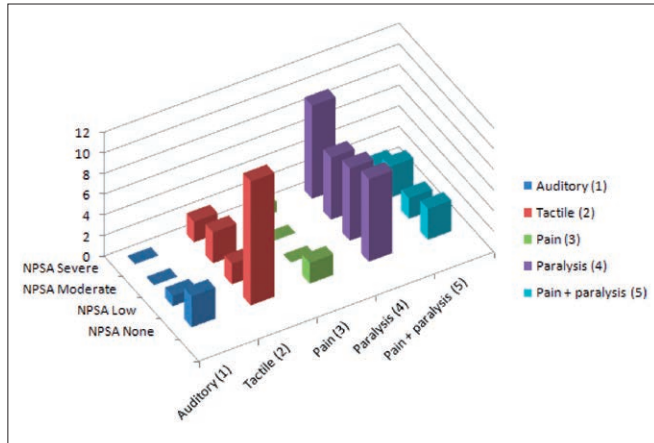
25.19 It was possible to estimate the timing of the AAGA experience in 51 patients (74%). In contrast to the Certain/probable and Possible cases, the majority of experiences were recalled as likely being during surgery, in the maintenance phase (53%), rather than at induction (35%) or at emergence (12%). Paralysis (47%), sometimes with pain (16%), was the commonest experience recalled, whereas pain alone (20%) or tactile (23%) were less frequent. Just 4% of patient had auditory recall alone (Figure 25.4).

**Figure 25.4.** Distribution of the Statement Only cases (excluding unknowns) by phase of anaesthesia (AAGA more common in at surgery > induction > emergence) and by symptoms (by Michigan classification)



25.20 Just as for the Certain/probable and Possible cases (Chapter 6, Results) paralysis alone or with pain had the highest proportion (~50%) of important, longer term sequelae (i.e. moderate or severe modified NPSA scores). These occurred in fewer of those experiencing auditory or tactile sensations (~26%). However, there was considerable heterogeneity in NPSA scores by type of experience (Figure 25.5).

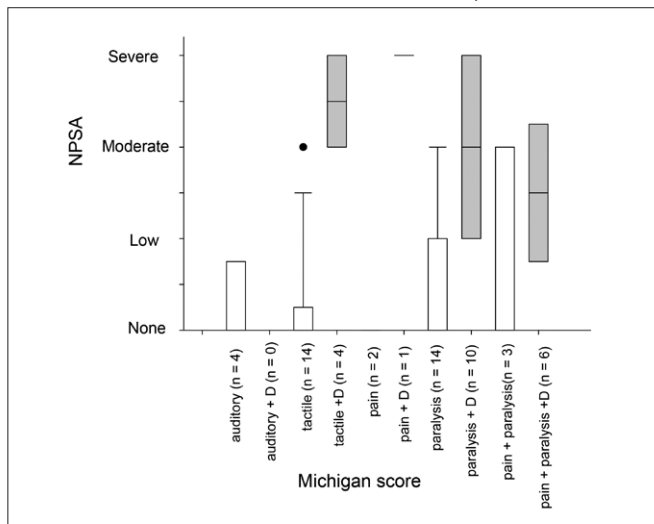
**Figure 25.5.** Distribution of the Michigan score by NPSA impact (excluding unknowns) for Statement Only cases



25.21 Overall, 36% of patients were distressed at the time, the highest proportions being those who sensed paralysis (42% of those paralysed) and paralysis with pain (67% of those in this category).

25.22 As with the Certain/probable and Possible cases (Chapter 6, Results), the perception of distress at the time of the AAGA (regardless of type of experience) appeared influential in determining longer term impact as assessed by modified NPSA score (Figure 25.6).

**Figure 25.6.** Statement Only cases: boxplots for modified NPSA score by Michigan score (n) with or without distress (D). White boxes – no distress and shaded boxes – distress. There is a clear association between distress and longer term sequelae

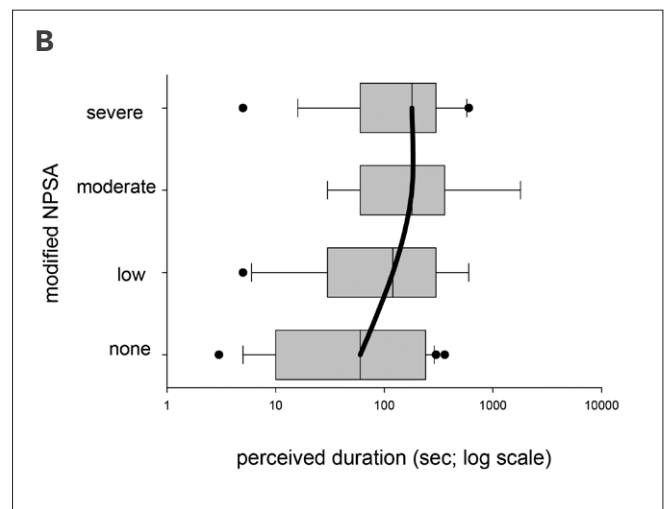
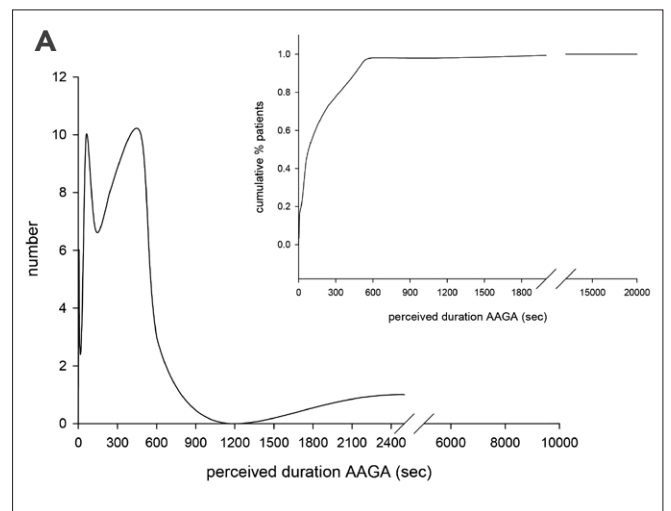


25.23 The perceived duration of the AAGA experience in the Statement Only cases was short (Figure 25.7A). Seventeen patients could not recall how long their experience might have lasted, and the median of those that could was 120 (60 – 300 [5 – 1,800]) sec (i.e. 2 min with an interquartile range of 1–5 min; the longest experienced judged at half-an-hour).

25.24 Despite this generally short perceived duration – and the considerable heterogeneity of impact – the longer-term impact was marginally influenced by duration, such that longer experiences of AAGA appeared to have slightly more adverse impact (Figure 25.7B).

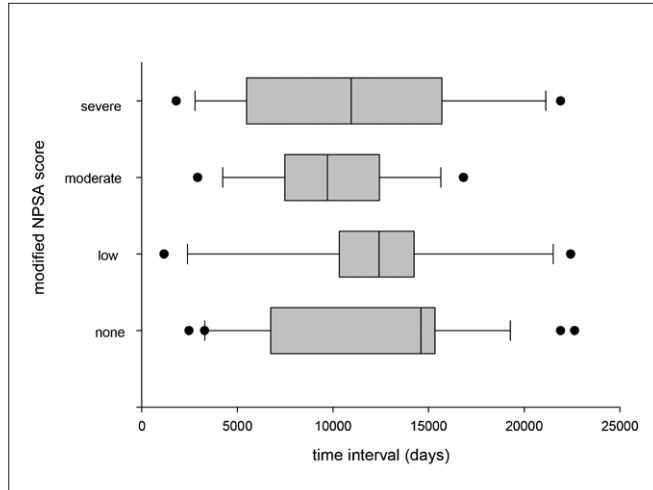
25.25 The relationship in Statement Only cases between distress and sequelae and between duration of AAGA and impact is broadly similar to that observed in Certain/probable and Possible cases (Chapter 6, Results).

**Figure 25.7.** Statement only cases: (A). Main panel: distribution of perceived duration of experience; Inset: cumulative distribution. (B). Boxplot of relationship of perceived impact of AAGA by modified NPSA score. The solid bold line joins the medians of boxplots to give a visual impression of relationships



25.26 There was no apparent relationship between the longer term impact of AAGA and the time delay in reporting (Figure 25.8).

**Figure 25.8.** Statement Only cases. Boxplot demonstrating the lack of relationship of the modified NPSA score with delay in reporting.



### Unlikely reports

- 25.27 There were 12 (4% of admissible) reports in whom there was access to medical records that were judged unlikely AAGA.
- 25.28 The reasons for this judgement included: where contents of the report that could not, or unlikely could not, have occurred during the course of surgery; where the patient-story was directly contradicted by the evidence, where an anaesthetist provided care, but not anaesthesia or sedation.
- 25.29 There was one instance where the surgical team encountered a complication related to inadequate muscle relaxation and coughing, and later informed the patient that they had been 'aware under the anaesthetic'. The patient had experienced severe pain when awake post-operatively but interpreted this as being part of the awareness and of the complications.
- 25.30 There were three reports to NAP5 based on post-operative satisfaction questionnaires that included questions on possible awareness. Two were judged Unassessable, but in only one was the patient followed up, and this revealed the original responses had been incorrect.

A middle-aged patient suffered brief asystolic cardiac arrest during general surgery, with a good outcome. The patient later reported hearing a conversation related to this resuscitation, but no recall of any events during surgery. It seemed likely that this was a conversation at handover in recovery.

An elderly patient was scheduled to undergo urgent surgery but was noticed to be in an arrhythmia, which was treated with magnesium in the anaesthetic room. The patient became flushed and dysphoric. After a period of time, when stable, anaesthesia was induced uneventfully (no neuromuscular blockade; spontaneous breathing via a supraglottic airway). The patient later reported AAGA, having recalled the word 'magnesium'. It was felt that this related to the period of resuscitation, rather than the period of anaesthesia.

In response to a satisfaction questionnaire related to cardiac surgery, a patient indicated awareness on entering the operating theatre, after induction, and awareness between induction and awakening. However, on later contacting the patient it was clear that there had been no AAGA and the first recall was on the intensive care unit.

An elderly patient reported that they had experienced AAGA during a general surgical operation, describing specific comments and conversations and saying that they had suffered a myocardial infarction as a result of this. In fact, the patient had not undergone an operation, which had been abandoned soon after anaesthetic induction because the patient developed an arrhythmia. This had been appropriately treated, and later cardiac review excluded a myocardial infarction. The anaesthetic had involved a propofol TCI technique, no neuromuscular blockade, and a BIS monitor had been used during resuscitation, with readings <40 throughout. The details of conversations reported were refuted by staff.

### SUMMARY

- 25.31 In the Statement Only group, the interval for reporting was very long, often years or decades. One difference between this group and the Certain/probable or Possible group was that the main phase of anaesthesia in which AAGA was recalled was maintenance (rather than the dynamic phases).
- 25.32 The incidence of longer term psychological impact (or distress recalled at the time) differed little from the Certain/probable or Possible group.
- 25.33 However, there was an association (as with the Certain/probable or possible group) of distress at time of AAGA with longer term adverse harm. Distress was, again, most commonly associated with sensations of paralysis.
- 25.34 Experiences recalled many years later in the Statement Only group were no longer in perceived duration than the Certain/probable or Possible group, and there was no clear relationship between perceived duration and longer term psychological impact.